MICROWAVE SPECTROSCOPY AT MISSOURI S&T

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At the Missouri University of Science and Technology we are interested in developing tools and techniques to obtain new understanding and disseminate knowledge about molecular rotational spectra. We accomplish these ends by researching new ways to attack microwave spectroscopic problems both in the research and teaching laboratories. Some of the problems we are interested in involve providing research-grade microwave teaching tools to students with limited financial resources, O_2 van der Waals complexes and the complexities of spin coupling, and trying to identify new approaches for chiral molecule analysis using the microwave technique. Because many of our spectroscopic studies employ the CP-FTMW technique, we are also developing methodologies to improve the sensitivity of this instrument through instrumental design. This talk will provide a brief overview of each of these topics and some of the progress we have made.